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ABSTRACT

Described is the behavioral program for autistic children in use at the Valley View School District in Illinois. Sections cover the following topics: (1) characteristics of the autistic child (basic impairments, special skills, and secondary behavior problems), (2) basic principles of operant conditioning, (3) description of the methods used in the Valley View Program for sequential training of language, (4) explanation of the training sequences used in the Valley View Program, and (5) a brief overview of some results with autistic children in the program. Appended are behavioral charts for 18 subjects and sample record sheets. (IM)

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TEACHING LANGUAGE TO AUTISTIC CHILDREN

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TEACHING LANGUAGE TO AUTISTIC CHILDREN

BY

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May, 1974

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INTRODUCTION

Psychologists and doctors have been diagnosing children "autistic" for many years. These children were usually institutionalized, or kept at home with no educational placement available. It is only within the last ten years that techniques have been found to help these children, and facilities have been opened to implement these techniques.

The complexity of the problems of these children is only beginning to be understood. A wide range of handicaps is covered by the "autistic syndrome," but no child has all the characteristics included and some children have additional handicaps not included. There are many questions still to be answered, including the cause of autism and the differentiation of the autistic child from the aphasiac child and other childhood psychotics.

The label of autism does not help the therapist or teacher to train this child. The most helpful diagnosis would be a description of each child's specific problems and skills. Yet, despite the definitional and diagnostic problems, some great educators have come forth and helped these children overcome the most important of their basic impairments--language and communication with the outside world.

These techniques have been developed for "autistic" and "autistic-like" behavior; therein lies the success. Conventional educational programs are inadequate.

In this paper some of the most successful programs and techniques will be reviewed. In order to understand the very structured and sometimes severe program, the autistic child must be defined.

CHAPTER I

Characteristics of the Autistic Child

The syndrome of early infantile autism was first distinguished by Kanner in 1943. The initial article (Kanner,1943) listed twelve diagnostic features which he felt to be characteristic of early infantile autism:

1. The autistic child is always aloof (as opposed to withdrawn).

2. The autistic child looks normal, alert and expressive.

3. Motor coordination seems normal with quick, skillful movements.

4. The child avoids eye contact and lacks visual or auditory responses to others; thus, the child appears to be deaf and blind to people.

5. There is no physical reaching out from infancy.

6. The child does not initiate sounds or gestures.

7. There is a failure to use speech for purposes of communication.

8. The child has a marked facility with objects.

9. Psychometric performance indicates that cognitive potentialities are masked by the basic disorder. The appeal of form boards and peg boards yielded evidence of normal or superior performance.

10. There is an obsessive desire to maintain sameness.

11. Bed-wetting, thumb sucking, nail biting and masturbation are rarely associated with early infantile autism.

12. The rate of occurrence is less than 1 per cent in the general population.

Kanner ascribed the etiology to an emotional deprivation. The parents of the children he saw were all from the academic and professional communities, and their family life was characterized by obsessive meticulosity and intellectualization. Kanner felt that the lack of emotional spontaneity and warmth of the parents played a large role in the development of early infantile autism.

Stark (1968) described early infantile autism as a deficiency disease characterized by an inadequate, unstimulating, and excessively diluted mother-infant relationship.

Green and Schecter (1957) used the term "autistic" to connote the inadequate interpersonal relatedness of the child which is felt to be demonstrated by the child's lack of successful, meaningful, verbal communication.

Ornitz and Ritvo (1968) define autism with a subcluster of symptoms: disturbances of perception, motor behavior, relating, language, and developmental rate and sequence.

Dr. Lorna Wing (1972), a well-known English authority on autism, states the various aspects of the typical autistic syndrome belong under three main headings:

Basic Impairments,

Language problems are in both spoken and nonspoken language. These children have poor comprehension of speech as well as information conveyed by gesture, miming, facial expression, and bodily posture. Problems of pronunciation, poor control of pitch, volume and intonation of voice as well as lack of use of gestures, miming facial expression and bodily posture, are noted.

Perceptual problems include a tendency to use peripheral rather than central visual fields--responding to movement and outline rather than to details: looking past rather than at people and things. The child shows unusual responses to sounds (indifference, distress, fascination), pain and cold (indifference, overreaction), and being touched (pushing away when touched lightly but enjoying tickling and romping).

Problems of motor control and directional orientation make it difficult for these children to copy skilled movements made by others and to make large spontaneous movements on their own. Various abnormalities of physical development, autonomic function and vestibular control can be mild to severe.

Special Skills,

Sometimes a skill stands out in contrast to the child's other behavior, although it may not be as good as that of normal children of the same age. These would include nonlanguage skills. Such a skill might be music, arithmetic, dismantling and assembling mechanical or electrical objects or fitting together jigsaw puzzles. Many of these children appear to have high visual memories (they memorize parts of conversations, lengthy poems and lists of things).

Secondary Behavior Problems,

The child resists change, possibly from his fear of a world he cannot understand and a desire to cling to the objects and routines he knows. His lack of imaginative play and creative imitation can be predicted from the child's lack of understanding of language and symbols. He has a lack of fear of real danger and an excessive attention to minor or trivial aspects of things in the environment instead of taking in the meaning of the whole scene. He is socially immature and displays difficult behavior as well as appearing odd in facial expression, posture and movement.

Dr. Wing (1972) regards early childhood autism as a condition of multiple impairments, many of which she believes could be related fairly directly to abnormalities of brain function. She states that recent studies confirm that the pattern of behavior can begin in the second or third year of life, but fail to confirm theories that parental coldness, mishandling

or rejection cause the condition. Dr. Wing believes parents and professionals have come a long way and are beginning to come closer to the real core of the problem so that in time there will be an answer to, "What is an autistic child?"

CHAPTER II

Basic Principles of Operant Conditioning

Reinforcement

Developing speech in nonverbal autistic children is a long and intricate process using behavior modification, operant conditioning and precision teaching shaping. Lovaas (1965), who has done much work with speech and imitation training of autistic children, says that one cannot merely provide models of desired behavior and expect these children to acquire that behavior.

Much research has been done showing that consequences of a behavior will increase or decrease the frequency of that behavior under a specific stimulus condition. These consequences (reinforcers) are usually events which are important, significant, or meaningful for the particular child.

With normal children, attention and praise can be used as consequences to strengthen behavior (Harris et al., 1966). These consequences have minimal to no effect on these severely disturbed children. Generally, food has been found to be the most positive reinforcer for modifying speech and other behaviors of deviant children (Lovaas, 1967, Risley and Wolf, 1967, Martin et al., 1968).

The ideal food reinforcer is one which the child likes, can eat a lot of and cannot be readily played with. When the child responds appropriately, the therapist immediately says, "Good," or "That's right," while dispensing the food to the child. This verbal statement bridges the time gap between the appropriate response and the presentation of the food, thus making the reinforcement contingencies more precise. To save time, the food is placed directly in the child's mouth by the therapist (Risley and Wolf, 1967). The effectiveness of the food reinforcer can be increased by mild food deprivation. Lovass continually paired social reinforcers. The child's meal was given for correct response and incorrect response resulted in temporary withdrawal of reinforcement, or in some cases, punishment; e.g., slapping or mild electric shock (Meacham and Wiesen, 1969).

Extinction

Extinction might be termed the unlearning of a learned response through the process of nonreinforcement.

"Most deviant children exhibit behavior which is incompatible with the behavior involved in speech training. This behavior must be reduced before notable progress can be made in establishing functional speech. Systematic extinction procedures in conjunction with reinforcement of appropriate responses have usually been sufficient to eliminate these behaviors," (Risley and Wolf, 1967).

Hewett (1965) worked with autistic children and found that normal speech training techniques were not successful because the children withdrew to a severe degree and preferred self-directed activities. Hewett used special

wooden training booths to cut down extraneous stimuli and introduced isolation and darkness as negative reinforcers which were effective in varying degrees; but all subjects would work to avoid negative reinforcement.

Risley and Wolf (1967) used a procedure called "timeout from reinforcement." Once a child would sit in his chair, with eye contact for at least part of the therapy session, they would look away from the child any time mild disruptive behavior occurred. When the child was again sitting silently in his chair, they would reinforce this by attending to him and proceeding with the session.

Martin et al. (1968) and Lovaas (1966) sometimes used a quick, sharp slap with a verbalization of "No " alone as he had apparently come to association of the slap with the "No!"

CHAPTER III

The Valley View Program for Sequential Training of Language

Operant Conditioning

In this program positive reinforcement is always food (Jello, pudding, ice cream, pretzels or cereal), paired with "Good," or "That's right," said by the therapist as the food is put in the child's mouth. Extinction of disruptive behavior is the "time-out from reinforcement" form. Any time during the session the child disrupts, e.g., getting out of his seat, screaming, singing or self-stimulating, the therapist immediatley looks away until the child has stopped; the child has no opportunity to earn reinforcers. The isolation booth is used after three consecutive trials in which the child displays avoidance behavior; e.g., no eye contact and no answer after three prompts in a previously accomplished activity.

The design of the program for these children is based upon strict operant techniques. There is close control of each child's behavior. The program is structured to control incoming stimuli by using a special environment for teaching. A conditioning booth using light for positive behavior helps the therapist control the child's behavior, rule out extraneous stimuli, establish eye contact and speech. When the child becomes unruly, does not attend to the therapist or the lesson, the light is turned off in the booth. When the child is no longer unruly and is once again attending to the specific learning task, the light is turned on in the booth. Research determined that a program of rewards for accomplishments was effective in breaking down the autistic child's preoccupation. (Judevine Center, Blackwell, Hewett, Santa Barbara Project, Lovaas, U.C.L.A. Clinic). Children in the individual training sequences exhibit the following behaviors: limited eye contact, momentary attention spans, the inability to attend to perceptual stimuli, the inability to remain seated, the inability to imitate or the inability to verbalize, disruptive and bizarre behavior.

Children in the individual training sequences are trained to develop attending behavior. The training procedures are implemented immediately and continued until the child has developed the ability to attend to the lessons for a 20-minute time period. At the beginning stages, when establishing eye contact, the student/teacher ratio is 1 to 1. Since parents are cotherapists in the program, the parents and teacher aides function with children needing a 1 to 1 ratio.

Initial group experience helps the child develop adequate skills and socialization. At this stage, a beginning is made with the use of activities as reinforcers. Two children with complimentary skills may work together. There is a need to choose an activity reward to maintain attention. The child's ability to develop phrases and spontaneous speech are increased in this clinic classroom. Teachers are currently from the fields of behavior disorders and learning disabilities. In the clinic classroom, food is rarely offered as a reward. By this stage, many of the children have begun to understand verbal praise and tactile affection. The children who do not conform to the class's behavior standards are put in well-ventilated, well-lighted time-out rooms. Some autistic children misbehave at moments when they dislike what the class is doing, as for example, language development. When this happens, the offending child is taken to the time-out room, usually for 3 to 5 minutes, but kept within earshot of the class. Meanwhile, the teacher has switched the class to one of the offending child's favorite activities. When the time-out is over, the child re-enters the class and the teacher resumes the language lesson. Eventually, the child is expected to be cooperative. Children in this group exhibit behaviors of semi-eye contact, ritualistic and compulsive behavior patterns and estranged conditions of echolalia.

Baselines and Testing

Before each procedure is initiated a baseline is taken. The baseline test score determines the level of performance of the child before training. Items to be trained are used in baseline testing. During baseline testing, no positive or negative reinforcers are used.

A post test is given after each procedure has been administered. During the post testing, neither positive nor negative reinforcers are used. The post test, after a procedure has been administered, is given before the procedure. By comparing the baseline score to the post test score the amount of learning can be measured.

Prompting

If the child responds incorrectly or fails to respond to the stimulus given by the teacher, a prompt is necessary. The specific type of prompt depends upon the response desired. By actually putting the child through the desired task he will learn by doing rather than by watching only. As the child begins to learn the correct response, the prompt is gradually eliminated. For example, in teaching the child to make the "B" sound, the prompts are: (1) moving his lips to form the "B" sound, (2) touching his lips, (3) touching his cheek, and (4) the teacher raises her hand toward the child. It is in this manner that the prompts are gradually faded.

Schedule of Reinforcement

At the beginning of every phase of every lesson, the reinforcement schedule is one hundred per cent. That is, every time a desired response is given, it is reinforced. After several days (6 or 7) of successful trials, the reinforcement schedule is lowered to fifty per cent. Every other correct response is rewarded. In some cases the schedule is sixty-six per cent. Lowering the reinforcement schedule helps to maintain the response.

Recording

Record sheets are used for all phases of the program. The teacher does the recording as well as administers the program.

A response is recorded after the reinforcement is given and before the next stimulus is given. During some sessions, checks are made by another person recording the same information at the same time as the teacher. The data from each recording is compared and the reliability determined. All of the record sheets supply the same basic information: date, session number, number of correct and incorrect responses, number of trials until mastery of task, what the exact task is, and the name of the child.

The teacher records all correct responses with a vertical line and incorrect responses with a circle. All prompts are recorded by indicating the number required per session.

Accurate recording is necessary in order to determine when the child is ready to move on to the next step in the program.

CHAPTER IV

Training Sequences Used in the Valley View Program

Overview of Procedure

1. Determine what constitutes a positive reinforcer for the individual child. This is done by informal observation or by presenting the child with a series of foods and objects and determining his preference.
2. Obtain the baseline for each objective.
3. Determine, by teacher observation, the individual child's attention span for the specific task. The target training time is 20 minutes, but some children perform more beneficially for only 10 minutes in the beginning stages of an objective. In this case, the training time is progressively increased until on target.
4. Obtain the desired response frequency for each objective. This is given at the beginning of each objective. For example, Objective 1--Sitting in Seat (20-20). This means that the child must respond 20 times in 20 minutes or once in every 60 seconds. Some objectives are followed by (80-20) which means a response is required every 15 seconds or 4 times in a minute.
5. Once every 15 or 60 seconds (whichever is applicable) say, "Sit down," or whatever applies to the specific objective.
6. Prompt if necessary.
7. The child has 15 or 60 seconds (whichever is applicable) to respond.
8. Record the responses.
9. When there is a 100 per cent correct response in any 10-minute interval, go on to post test and the next objective.
10. If there is less than a 75 per cent correct response in any 20-minute training session, continue with the present objective.

Attending Behavior
Objective 1: Sitting in Seat (20-20)

Procedure

1. T. (therapist or teacher) says "Sit down," and seats S. (subject or student)in a chair. T. waits for 60 seconds then reinforces S. T. continues to reinforce S every 60 seconds for a 10-minute period then proceeds to the next objective. If S. gets up from his chair within this time, T. carries out the remaining sequence.
2. T. seats S. in a chair and reinforces immediately.
3. If S. remains seated, he is again reinforced 2 seconds later.
4. If S. continues to remain seated, he is again reinforced 4 seconds later. Additional reinforcers are given after the following intervals: 5, 10, 15, 25, 35, 45 and 60 seconds consecutively.
5. If S. gets up from his chair at any time before the 60-second time has been achieved, T. returns S. to the chair and begins the procedure over again.
6. When S. remains seated for 20 minutes, T. proceeds to the next objective.

Evaluation

The completion of developing the ability to sit in a seat is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child remains seated. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Attending Behavior
Objective 2: Eye Contact (20-20)

Procedure

1. T. addresses S. by name, says "look at me," and turns S.'s face toward him (T.). T. reinforces S. immediately for eye contact or a close approximation. T. continues to reinforce S. every 60 seconds for a 10-minute period then proceeds to the next objective. If S. fails to respond any time during this period, T. carries out the remaining sequence.
2. T. continues as in Step 1 and fades out the physical prompt until S. begins to look at T. with the verbal prompt only.
3. When S. exhibits eye contact without being addressed, T. reinforces these responses and discontinues addressing S.

Evaluation

The completion of developing the ability to establish eye contact is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child displays eye contact. The training procedure is for a

minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Discussion

If these children cannot sit in their chairs and establish eye contact, they cannot possibly profit from any training program being offered.

Attending Behavior

Objective 3: Attend Upon Command (20-20)

Procedure

1. T. places 10 relatively familiar objects on a table.
2. T. waits for S. to look at him and then says, "Look," and points to one of the objects every 60 seconds. S. is immediately reinforced for looking at the object. T. continues to say, "Look," and point to an object every 60 seconds for a 10-minute time period then proceeds to the next objective. If S. fails to respond any time during this period, T. carries out the remaining sequence.
3. T. continues Step 2 and adds the prompt of turning S.'s head toward the object. T. repeats this every 60 seconds and reinforces S.
4. T. fades the prompt until S. begins to look at the object upon command.

Evaluation

The completion of developing the ability to attend upon command is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child looks at an object. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Imitative Behavior

Objective 1: Hand Clapping Imitation (20-20)

Procedure

1. T. sits in a chair facing S. T. waits for S. to look at him and prompts by saying, "Look," if necessary.
2. Every 60 seconds, T. says, "Do this," and claps his hands.
3. If S. attempts to clap his hands, T. reinforces S. immediately. T. continues this for a 10-minute time period and proceeds to the next objective. If S. fails to respond any time during this period, T. carries out the remaining sequence.
4. When S. does not respond, T. grasps S.'s wrists and takes S. through the motions of the response. T. then reinforces this approximation of the response. T. continues this until S. responds every 60 seconds without aid.

Evaluation

The completion of developing hand clapping imitation is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child claps his hands without aid. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses, without aid, is obtained.

Imitative Behavior

Objective 2: Arms Above the Head Imitation (20-20)

Procedure

1. T. sits facing S. and says, "Do this," followed by T. raising his (T.) arms above his head.
2. If S. responds correctly, T. reinforces and repeats this every 60 seconds for a 10-minute time period then proceeds to the next objective. If S. fails to respond any time during this period, T. carries out the remaining sequence.
3. When S. does not respond, T. shapes the response by grasping S.'s wrists and raising his arms. T. then reinforces this approximation of the response.
4. T. continues to repeat Steps 2 and 3, fading the prompt, until S. responds correctly without aid.

Evaluation

The completion of developing arms above the head imitation is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child raises his arms above his head. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses, without aid, is obtained.

Imitative Behavior

Objective 3: Expansion of Imitative Repertoire (20-20)

Procedure

1. T. follows the same procedure used in Imitative Behavior, Objective 2. Additional imitative responses to be shaped are:
   a. folding hands
   b. standing up
   c. sitting down
   d. head nodding
   e. head shaking
   f. pointing to objects
   g. placing forefinger directly on objects
   h. picking up objects and moving them to another point in space.
2. If, at any time, S. imitates the new model on its first presentation and can do so 10 consecutive times in 10 minutes without shaping, T. moves on to the next model. However, if S. has to be shaped to imitate one of these new models, T. continues the Objective 2 Procedure and does not present any more new models in this session.

3. When S. can produce all the imitative behaviors (with the exception of starred items), T. proceeds to the next objective.

Evaluation

The completion of oral motor imitation is considered on target when the child has mastered the imitation of all required models listed under the procedure. T. counts and records the amount of 60-second intervals in which the child imitates each model. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses, without aid for each model or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses without aid is obtained for each model.

Discussion

Nonvocal imitation is an important preliminary step that strengthens eye contact and prepares the child for more difficult learning tasks (Lovaas, 1967). This imitation aids in the refinement of gross motor control and reinforces acceptable behavior while diminishing the frequency of avoidance behavior.

The purpose of not training the starred items under Oral Motor Imitation is to determine if any generalization has taken place. These items are included only in the baseline and post test but are not trained

Vocalization Training

Objective 1: Reinforcement of all Vocalizations (80-20)

Procedure

1. T. makes a sound (any sound will do as this sets the stage for more accurate vocalization later) and S. is reinforced immediately for any verbal response. T continues to phonate once every 15 seconds for a 10-minute time period. If S. responds correctly and attends to T.'s face during this time, T. proceeds to the next objective.
2. If S. does not respond, T. prompts by saying, "Look," before making the sound.
3. If S. still does not respond, or fails to attend to T.'s face, or verbalize, T. adds a physical prompt by shaping S.'s mouth for a sound or touching his lips.
4. T. continues the procedure until S. makes some vocal response without a prompt.

Evaluation

The completion of reinforcing all vocalizations is considered on target when the child masters all steps listed under the procedure T counts and records the amount of 15-second intervals in which the child makes any sound. The training procedure is for a minimum of 10 minutes with 40 (100%) responses and the child attending to the teacher's face, or until a 20-minute time period with 60 (75%) responses and the child attending to the teacher's face for each response is obtained.

Vocalization Training

Objective 2: To Vocalize a Selected Phoneme (20-20)

Procedure

1. T. makes a selected vocal sound and helps S imitate by manually shaping S.'s lips. If S. makes any close approximation with his lips held this way, T. reinforces immediately.

2. T. continues to make the selected sound without prompting S. If S. responds correctly for a 10-minute time period, T proceeds to the next objective.
3. If S. does not respond without manual shaping or responds without attempting an approximation of the sound, T. continues as in No. 1. The sounds selected should have a high degree of visibility. The following minimal placement cues are found effective:

    a. Close lips. Hum.
    b. Press lips. Say sound
    c. Press lips. Whisper.
    d Press tongue up. Sing. Try lalalalala
    e. Press tongue up. Say sound.
    f Press tongue up. Whisper.
    g. Press with back of tongue. Whisper
    h. Press with back of tongue. Say sound.
    i. Say "Ah". Now raise tongue gradually.

4. T. gradually fades the prompt and S. must repeat the sound on his own.

Evaluation

The completion of vocalizing a selected phoneme is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds with the selected phoneme or close approximation. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses, without aid or until a 20-minute time period with a minimum of 15 (75%) correct responses without aid is obtained.

Vocalization Training

Objective 3: Imitation of Chained Phonemes (20-20)

Procedure

1. If S.'s repertoire of vocalizations includes some fairly precise productions such as, "Goo-goo," T. should present this as the model to be imitated and reinforce S. for copying it.
2. After S. responds correctly 10 times in a 10-minute time period, T. presents the sound in a slightly varied form such as, "Ga-ga," and reinforces S. immediately for the correct response.
3. When S. responds correctly 10 times in a 10-minute time period, to the varied form of the sound, T. proceeds to the next objective

Evaluation

The completion of developing the ability to imitate chained phonemes is considered on target when the child masters all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds to each sound. The training procedure is for a minimum of 10 minutes for each sound with 10 (100%) correct responses or until a 20-minute time period for each sound with a minimum of 15 (75%) correct responses is obtained.

Discussion

A child must be able to make sounds before he can speak. It is desirable for the child to make prelinguistic vocalizations and to babble. To encourage this, the child is reinforced for all sounds emitted (Lovaas, 1967)

"Reliable and immediate imitation can be obtained by systematic reinforcement of imitation," (Risley and Wolf, 1967, p. 79).

Behavior Upon Verbal Command

Objective 1: Stand Up When Commanded (20-20)

Procedure

1. After S. has been seated, T. says, "Stand up," and reinforces S. for the correct response.
2. T. repeats the command every 60 seconds for a 10-minute time period then proceeds to the next objective.
3. If S. does not stand up, T. says, "Do this," and simultaneously stands up while saying, "Stand up".
4. If S still fails to stand, T. helps S. into a standing position while saying, "Stand up," and reinforces S.
5. T. helps S. to sit down after each trial.
6. This procedure is continued until S. responds correctly to the verbal command without aid.

The following objectives for Behavior Upon Verbal Command are trained by using the same procedure as Objective 1. Only the physical prompts and verbal commands are varied to fit the behavior.

Objective 2: Sit Down (20-20)
Objective 3: Fold Hands (20-20)
Objective 4: Shake Head (20-20)
Objective 5: Walk (20-20)
Objective 6: Touch Toes (20-20)
Objective 7: Raise Arm (20-20)
Objective 8: Wave Hand (20-20)
Objective 9: Turn Around (20-20)
Objective 10: Jump (20-20)
Objective 11: March (20-20)
Objective 12: Go There (T. points) (20-20)
Objective 13: Come Here (T. points) (20-20)

Evaluation

The completion of developing a behavior upon command is considered on target when the child has mastered all steps listed under the procedure for each objective. The procedure is followed no more than 20 times for each objective, each session. The training procedure for each objective is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained. T. counts and records the amount of 60-second intervals in which the child responds to each objective.

Discussion

Up until training begins, many of these children pay no attention to the verbal activities going on around them. They are now being shown that they get reinforced for doing what the teacher tells them to do. They are learning to attune and respond to auditory stimuli.

Mylkebust (1960) presented a hierarchical scheme by which language develops. He stated that: first, the child gains experience; second, inner language and meaning develop; third, comes auditory receptive language; fourth, is auditory expressive language; fifth, is visual receptive language or reading; and lastly comes visual expressive language or writing.

Nonverbal Identification of Objects and Pictures

Objective 1: Pointing to Named Object (20-20)

Procedure

1. T. places a ball (or other familiar object) on the table and says, "Show me the ball". If S. points to the ball, T reinforces.
2. T. continues this for a 10-minute time period then proceeds to the next objective.
3. If S. does not respond, T. prompts by saying, "Do this," and points to the ball himself If S. follows the prompt, T. reinforces
4. If S. still fails to respond, T. adds physical prompts and reinforces each shaped response.
5. T. continues this, gradually fading the prompts, until S. responds without aid.
6. Various objects the child has seen or played with the classroom are introduced, one at a time, and the above procedure is followed for each

The following objective for Nonverbal Identification of Objects and Pictures is trained by using the same procedure as Objective 1, the only variation being that T. places 2 objects on the table instead of 1

Objective 2: Pointing to Named Object From a Choice of Two (20-20)

Evaluation

The completion of developing the ability to identify objects is considered on target when the child has mastered all steps listed under the procedure for each objective. T. counts and records the amount of 60-second intervals in which the child responds to each objective The training procedure for each objective is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Nonverbal Identification of Objects and Pictures

Objective 3: Pointing to Named Picture and Pointing to Named Picture From a Choice of Two or More (20-20)

Procedure

1. No more than 10 trials per session on the same picture. The pictures used should be of the objects in the previous objectives
2. T. presents a picture of a ball (or other familiar object) and says, "This is a ball". T. then says, "Show me the ball". If S, responds correctly, T. says, "That's right This is a ball". T. then reinforces S.
3. If S. fails to respond, T prompts by saying, "Do this," and T points to the picture of the ball. If S. responds correctly, T reinforces, T. continues this until S. can correctly identify 10 pictures.

4. Two of the pictures are placed together and T. says, "This is a ball, (T points to the picture of the ball). Show me the ball." If S responds correctly, T. reinforces
5 If S. points to the wrong picture, T. says, "No. This is a ball, (T. points). Show me the ball." If S. responds correctly, T. reinforces.
6. When S. has responded correctly to 2 consecutive trials on each picture, a third picture is added. The commands now involve all 3 picture is added. The commands now involve all 3 pictures in a varied order.
7. The 3 pictures are changed, one at a time, after S. responds correctly to each grouping for 10 consecutive trials.
8. When S. knows all the pictures used, they are to be reviewed continually. New words can be introduced this way; first in isolation and then adding the new picture to 2 previously learned pictures.

Evaluation

The completion of developing the ability to identify pictures is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds to each picture The training procedure is for a minimum of 10 minutes with 10 (100%) consecutive, correct responses or until 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Discussion

In the above objective, the child learns to respond discriminatively to visual cues. He is learning that objects have labels, and later he will understand that the movement and sounds he can produce will name these familiar objects. (Stark et al., 1969)

Verbal Labeling

Objective 1: Naming Objects (20-20)

Procedure

1. T. presents a ball (or other familiar object) and asks, "What is this?". If S. says the correct word or some approximation, he is reinforced.
2. If S. makes an error, T. says, "No". T then points to the ball and says, "This is a ball". Then T. looks at S and says, "Say ball". If S. responds correctly, T. reinforces
3. When S has made 3 consecutive correct responses to the one object, T. adds another object and follows the same procedure as in Nonverbal Identification of Objects and Pictures, Objective 3; except there the child names the object rather than points to it
4. T. adds up to 10 objects as S learns to say them, then presents them in a varied order.
5 T. repeats this procedure for a minimum of 3 sessions

Evaluation

The completion of developing the ability to name objects is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds to each object. The training procedure is for a minimum of 10 minutes with 10 (100%) consecutive, correct responses or until a 20-minute

time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Verbal Labeling
Objective 2: Naming Pictures (20-20)

Procedure

1 T follows the same procedure used in Nonverbal Identification of Objects and Pictures, Objective 3 In this case, the child must name the picture rather than point to it
2. T attempts to shape S 's approximations to intelligible responses if necessary
3 When S can name 10 pictures on an intelligible level (discretion of T.) in 3 different sessions, T. proceeds to the next objective.

Evaluation

The completion of developing the ability to name pictures is considered on target when the child has mastered all steps listed under the procedure T. counts and records the amount of 60-second intervals in which the child responds. The training procedure is for a minimum of 10 minutes with 10 (100%) consecutive, correct responses or until a 20-minute time period with a minimum of 15 (75%) consecutive, correct responses is obtained.

Discussion

Stark et al., (1969) found that if the child was not naming the correct picture or object when one or more was presented, an additional prompt of placing candy near the object or picture to be named was successful T. would place the candy by the object to be named and if S. named it correctly, he would get the candy. Stark found that the child's desire to get the candy improved his ability to perform. This prompt would be gradually faded out.

If the child was having difficulty remembering the names of the objects, verbal fading could also be used. In this process, T says, "What is this?", and then looks away from S. and says the name of the object in a softer voice If S. responded correctly, T would look at S. and reinforce, gradually, as S learned the name, T. would say only the initial sound of the object, always looking away as he gave this extra prompt S. would be reinforced as usual when he gave the response, whether the prompts were given or not

Fading could also be used for closer and closer approximations of the object's name. Here, however, S. would not be reinforced or looked at until his sounds were good enough for that session. At each session, a closer approximation would be expected

Verbal Labeling
Objective 3: Saying Own Name (20-20)

Procedure

1 T. looks at S and says, "What is your name?" If S says his name or a close approximation, T says, "That's right Your name is _____." T. then reinforces
2. If S. makes no response, T. says, "Your name is _____ Say _____." T then reinforces approximations or correct responses.
3. If S. says something incorrect, T. says, "No. Your name is_____.

Say _____." T. continues with this, using prompts where needed, until S. makes the appropriate response in 10 consecutive trials then proceeds to the next objective.

Verbal Labeling
Objective 4: Saying Teacher's Name (20-20)

Procedure
1. T. points to self (pointing will later be faded) and says, "What is my name?". If S. says T.'s first name, T. says, "That's right," and reinforces
2. If S. makes no response, T. says, "My name is _____. Say _____." If S. responds correctly, T. reinforces
3. If S. makes an incorrect response, T. says, "No, My name is_____. Say _____." If S. responds correctly, T. reinforces. T. continues with this, using prompts where needed, until S. makes the appropriate response.

Evaluation
The completion of developing the ability to say one's own name and the teacher's name is considered on target when the child has mastered all steps listed under the procedures. T. counts and records the amount of 60-second intervals in which the child responds to each objective. The training procedure for each objective is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with 15 (75%) correct responses is obtained.

When a 10-minute time period with 10 (100%) correct responses is obtained for Saying Own Name, T. continues (at his discretion) to the next objective, Saying Teacher's Name, immediately. In this case, the response frequency requirements remain the same and T. does not vary the objectives.

Verbal Labeling
Objective 5: Alternation of Objectives 3 and 4 (20-20)

Procedure
1. T. asks S., "What is your name?", and reinforces the correct response.
2. T. then asks S., "What is my name?", and reinforces the correct response.
3. If necessary T. reverts back to methods used in Objectives 3 and 4 Procedures until the correct response is obtained.

Evaluation
The completion of alternating one's own name and the teacher's name is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20 minute time period with 15 (75%) correct responses is obtained.

Sequential Learning of Phrases
Objective 1: Four-Word Phrases (20-20)

Procedure

1. T. looks at S. and holds up a picture of an object and says, "This is a ball (or whatever picture is used), _____(child's name). This is a ball. What is this? This is a ball."
2. T. says to S., "What is this?". If S. responds with the phrase, "This is a ball," or close approximation, T. reinforces. A one-word response is no longer accepted.
3. If S. does not respond, T. looks away and says in a softer voice, "This is a ball". T. gradually fades this prompt.
4. If S. makes an incorrect response, T. says, "No. This is a ball. What is this? This is a ball." S. is then reinforced for the correct response.
5. If S. does not respond, more prompts are introduced.
6. If S. responds correctly to 10 consecutive trials, T. proceeds to the next objective immediately.

Sequential Learning of Phrases

Objective 2: Expansion of Phrases (20-20)

Procedure

1. T. follows the same procedure used in Objective 1, Four-Word Phrases.
2. The following phrases are to be learned:
   a. I want _____.
   b. My name is _____.
   c. That is _____(T.'s name, mommy or classmate).

Evaluation

The completion of learning four-word phrases and the expansion of them is considered on target when the child has mastered all steps listed under the procedures. T. counts and records the amount of 60-second intervals in which the child responds to each objective. The training procedure for each objective is for a minimum of 10 minutes with 10 (100%) correct responses or or until a 20-minute time period with 15 (75%) correct responses is obtained.

When a 10-minute time period with 10 (100%) correct responses is obtained for Four-Word Phrases, T. continues (at his discretion) to next objective, Expansion of Phrases, immediately. In this case, the response frequency requirements remain the same and T. may vary the phrases.

Sequential Learning of Phrases

Objective 3: Sentences With Verbs (20-20)

Procedure

1. No more than 10 trials per session on the same picture.
2. T. presents a picture of a girl walking (or other familiar action), looks at S. and says, "What is the girl doing? The girl is walking, _____" (child's name).
3. If S. responds correctly, T. reinforces. T. continues this until S. can respond correctly to 10 pictures.
4. If S. does not respond or does so incorrectly, verbal prompts while looking away are used.
5. When S. has responded correctly to 2 consecutive trails on each picture, T. presents them in varied order.

Evaluation

The completion of developing sentences with verbs is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with 15 (75%) correct responses is obtained.

Discussion

Risley and Wolf (1967) discuss the concept of generalization. They say that newly acquired appropriate speech will sometimes generalize spontaneously. The child can be systematically trained to respond to a variety of situations and individuals.

"Whenever a new word has been established in a therapy session, the therapist can continue to ask for, and reinforce the appropriate use of this word after the formal session, for instance, while walking around the building. The therapist can also conduct therapy sessions in the child's home, teaching the child to name household objects. Generalization training can be facilitated by initially selecting words and phrases to be taught which can be appropriately asked for frequently during the day and which are immediatley functional in the child's environment, e.g., "I want a cookie," (Risley and Wolf, 1967, p. 87).

Sequential Learning of Phrases

Objective 4: Verbalize About Self, Objects and Activities (20-20)

Procedure

1. T. presents a block, looks at S. and says, "What color is the block?". (The child must respond, "The block is _____.")
2. If S. responds correctly, he is reinforced.
3. If S. does not respond correctly, verbal prompts while looking away are always used.
4. When S. can respond to the block correctly 2 consecutive times, new objects or pictures may be introduced and varied with those previously learned. Some additional sentences used are: "What do you play with? I play with _____. How does this feel? This feels _____. What do you eat? I eat _____. What do you drink? I drink _____. Where is the _____? Here is the _____."
5. When S. has learned 10 sentence patterns, T. proceeds to the next objective.

Evaluation

The completion of developing the child's ability to correctly verbalize about common objects, including self and activities, is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child produces a sentence pattern. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with 15 (75%) correct responses is obtained. The sentence patterns and training procedure are repeated until S. responds without an auditory cue.

Sequential Learning of Phrases

Objective 5: Use Abstract Terms, Prepositional Phrases, Relative Terms and Pronouns (20-20)

Procedure

1. T. presents a puzzle piece (or other familiar object) to S. T. looks at S. and says, "Where is the puzzle piece? Here is the puzzle piece on my desk."
2. T. looks at S. and repeats, "Where is the puzzle piece?" S. must respond with the same phrase.. T. then says, "Here is the puzzle piece on my desk." S. must respond with the same phrase.
3. If S. responds correctly, T. reinforces.
4. If S. does not respond correctly, verbal prompts while looking away are used.
5. When S. can respond correctly to the object, picture, or whatever is used, 2 consecutive times, new items are introduced. Sentence patterns used in Objective 4 may be expanded by using prepositional phrases.
6. When S. can correctly respond to 10 different sentence patterns of this type, T. proceeds to the next objective.

Evaluation

The completion of helping the child use abstract terms including prepositional phrases, relative terms and pronouns is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child responds correctly. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with 15 (75%) correct responses is obtained. The sentence patterns and training procedure are repeated until S. responds without an auditory cue.

Development of Spontaneous and Conversational Speech

Objective 1: Spontaneous and Discriminatory Use of Yes and No (80-20)

Procedure

1. Using Verbal Labeling, Objective 1 Procedure, T. trains S. to name 2 strongly disliked foods such as peppers and onions. If these have been previously trained, T. begins with Step 2.
2. T. presents an onion (or other disliked food) and says, "Do you want an onion, _____?" T. waits 15 seconds for S. to respond.
3. If S. responds correctly, T. reinforces as usual.
4. If S. fails to respond, T. repeats the procedure using a verbal prompt while looking away until S. responds correctly 4 consecutive times.
5. If S. still fails to respond, T. may (at his discretion) give S. a taste of the disliked food before beginning the procedure again. When S. responds correctly 4 consecutive times, T. carries out the remaining sequence.
6. T. presents a cookie (or other desired food) and says, "Do you want a cookie, _____?" (child's name. Yes. Do you want a cookie, _____?" T. waits 15 seconds for S. to respond.

7. If S. responds correctly, T. reinforces with the desired food.
8. If S. fails to respond, T. repeats the procedure using a verbal prompt while looking away until S. responds correctly 4 consecutive times.
9. When S. responds correctly to each question 4 consecutive times, without a prompt, T. varies the questions and reinforcers.

Evaluation

The completion of developing the spontaneous and discriminatory use of yes and no is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 15-second intervals in which the child responds. The training procedure is for a minimum of 10 minutes with 40 (100%) correct responses or until a 20-minute time period with 60 (75%) correct responses is obtained.

Discussion

The use of yes and no is an essential preliminary step in the development of spontaneous and conversational speech; therefore, the training must establish a positive, discriminatory, verbal need to respond.

After the training procedure has been completed, T. uses the concept of generalization to expand the child's need for a spontaneous response. The questions presented to S. are used throughout the day and are varied to fit the occasion, thus encompassing activities (such as go outside, swing, etc.), toys, and various foods. The desired activity, toys or food is always the reinforcer for the correct response. Negative responses are reinforced by withholding the stimulus.

Development of Spontaneous and Conversational Speech

Objective 2: Spontaneous and Conversational Speech (20-20)

Procedure

1. T. presents a picture of a girl walking (from previously used action pictures) and looks at S. (no auditory cues). T. points to the action picture and S. responds, "The girl is walking."
2. If S. responds correctly, he is reinforced.
3. If S. does not respond correctly, T. points again to the picture and gives a physical prompt (no auditory cues).
4. This procedure is repeated 5 times for each picture used, if necessary.
5. When S. can respond to the picture 2 consecutive times with a subject, verb, object arrangement sentence, new pictures are introduced 1 at a time.
6. T. repeats the procedure until S. can produce sentences for 10 different pictures in variation.

Evaluation

The development of spontaneous and conversational speech is considered on target when the child has mastered all steps listed under the procedure. T. counts and records the amount of 60-second intervals in which the child produces a sentence with a subject, verb, object arrangement. The training procedure is for a minimum of 10 minutes with 10 (100%) correct responses or until a 20-minute time period with 15 (75%) correct responses is obtained.

CHAPTER V

Conclusions

At the beginning of the program twenty-four months ago, the four children who were individually trained exhibited momentary attention spans, limited eye contact, the inability to use speech for the purpose of communication, self-stimulating and self-destructive behavior. (Students 1,2,3, & 4, Appendix)

One child, age four, was echolalic but had no communicative speech, did not relate, and had a Benet IQ of 50. An attempt was made to administer the Weschler; however, the testing was terminated because of the child's lack of attending skills and failure to give verbal responses.

During the two-year period of therapy, he learned to attend a regular public school program for kindergarten children. This youngster's IQ went to 92 verbal and 93 performance on the WISC. He developed a personality that made him appealing to both teachers and peers. The only indication of his early difficulty can be detected in perceptual-motor awkwardness showing up in poor handwriting. It is quite likely that the traces of this impairment will become sufficiently remediated with further development so as to be unnoticeable. (Student 1, Appendix)

The second echolalic child, age 4, who has no communicative speech, was also untestable with the WISC and had a Benet IQ of 39.

After two years of therapy, the child's full-scale WISC is 74. This child continues to show improvement and is currently attending a first-grade class for half-day sessions. With continued development of this child's language skills, a higher full-scale IQ may be obtained in the future. (Student 2, Appendix)

A third child, age 7, who was nonverbal, showed a slower rate of progress during the two-year period of therapy. The psychotic symptoms of screaming, self-destructive behavior and lack of relatedness are no longer a problem. Even though the psychosis is no longer an issue, this child continues to function on a retarded level. He is appropriately naming objects and is using simple sentences to ask for water, candy and other food items without being given a cue. (Student 3, Appendix)

The fourth child who attended the full two years entered at age two and one-half with no language and with bizarre behavior. During this training he has learned to sit in his chair, establish eye contact for a ten-minute interval, to imitate gross motor movements, selected phonemes and words. The child is improving because of his young age and his increasing ability to imitate sounds and words. (Student 4, Appendix)

After twelve months or less of training, the remaining fourteen children can emit one-word utterances when cued, have attention spans up to ten minutes, can remain seated, and can imitate and phonate when cued. All but two of the children have progressed to a higher level of development. (Students 5 & 6, Appendix)

Two echolalic children who entered as completely nonverbal are now able to emit several one-word utterances. The results of training these children at this level indicates that the program is effective in expanding language from a nonverbal level to appropriately naming selected objects. (Students 7 & 8, Appendix) (Chap. III, p. 26)

The other ten children, five primary age and five preadolescents, were echolalic without spontaneous or conversational speech. The primary age children displayed a higher frequency of responses to auditory cues from the therapist. As a result of their awareness to auditory cues, these children were able to establish skills of sentence patterning. This primary group developed sufficient generalization skills to transfer the established sentence patterns to conversational speech. (Students 9, 10, 11, 12, & 13, Appendix)

The results of training the five preadolescents indicate that the program is effective in expanding language from a one-word utterance to three and four-word spontaneous sentences. Each child has learned a minimum of ten sentence patterns that reflect grammatical relationships of noun, verb, object. (Students 14, 15, 16, 17, & 18, Appendix) (Chap. III, p. 36)

Studies done on autistic children have suggested special education and a structured environment or they remain isolated and nonverbal, usually spending their lives in overcrowded institutions.

The younger children have more tantrums and possibly more frustration. Adolescence is almost like the quiet after the storm, but the vacant spaces are more conspicuous.

Lack of language is one of the more obvious of the child's handicaps and certainly his most debilitating. A pictorial mind is inadequate; time spent in self-stimulating activities rather than in thought (an expression of language) is wasted. Time for these children is of the utmost importance. Schools feel there is more hope for young children and take them in preference to the older children. Research shows that a child who has not developed language by the age of seven has a very poor prognosis.

This paper has shown that teaching autistic children is, in effect, a series of conditioning processes. Remarkable success stories are in the literature. It certainly seems an injustice to allow some of these children to suffer as they do because schools are full and good teachers are unavailable. Certainly some of the children could not be taught to care for themselves or communicate; yet proper remedial teaching could minimize the handicaps and secondary behavior problems of most. (Wing, 1972)

It is hoped that more attention, more time and guaranteed education as an alternative to institutionalization will solve many of the problems and questions facing autistic children and their families in the future.

	Student 1							Student 2							Student 3							Student 4						
Age Started/Present	4-2/6-2							5-6/7-6							6-7/8-7							3-5/5-5						
Months	0	4	8	12	16	20	24	0	4	8	12	16	20	24	0	4	8	12	16	20	24	0	4	8	12	16	20	24
ATTENDING BEHAVIOR																												
Sit, Eye Contact	S	S	S	S	S	S	S	P	S	S	S	S	S	S	P	S	S	S	S	S	S	P	S	S	S	S	S	S
Attend on Command	P	S	S	S	S	S	S	P	S	S	S	S	S	S	P	P	S	S	S	S	S	P	P	S	S	S	S	S
IMITATIVE BEHAVIOR																												
Clap, Arms Up	S	S	S	S	S	S	S	S	S	S	S	S	S	S		P	P	S	S	S	S			P	S	S	S	S
Fold Hands, Stand, Sit		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S			P	S	S	S	S
Nod, Shake Head		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S			P	S	S	S	S
Point to Objects		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S				P	S	S	S
Place Forefinger		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S				P	S	S	S
Move Objects, Yawn		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S					P	P	P
Open Mouth		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S					P	P	P
Protrude Tongue		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S					P	P	P
Elevate Tongue		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S						P	P
Lick Lips, Blow		S	S	S	S	S	S		S	S	S	S	S	S		P	P	S	S	S	S						P	P
VOCALIZATION TRAINING																												
Reinforce All Sounds	P	S	S	S	S	S	S	P	S	S	S	S	S	S	P	S	S	S	S	S	S						P	P
Selected Phoneme	P	S	S	S	S	S	S	P	S	S	S	S	S	S		P	P	S	S	S	S						P	P
Chained Phonemes		P	S	S	S	S	S		P	S	S	S	S	S			P	S	S	S	S						P	P
BEHAVIOR UPON VERBAL COMMAND																												
Stand, Sit, Fold Hands	S	S	S	S	S	S	S	S	S	S	S	S	S	S		P	S	S	S	S	S				P	S	S	S
Shake Head, Walk	S	S	S	S	S	S	S	S	S	S	S	S	S	S		P	S	S	S	S	S					P	S	S
Touch Toes, Raise Arm	S	S	S	S	S	S	S	S	S	S	S	S	S	S				P	S	S	S					P	S	S
Wave Hand, Jump	S	S	S	S	S	S	S	S	S	S	S	S	S	S				P	S	S	S					P	S	S
Turn Around, March		P	S	S	S	S	S		P	S	S	S	S	S					S	S	S						P	S
Go, Come		P	S	S	S	S	S		P	S	S	S	S	S					S	S	S						P	S
NONVERBAL IDENTIFICATION OF OBJECTS & PICTURES																												
Point to Named Object		P	S	S	S	S	S	S	S	S	S	S	S	S		P	S	S	S	S	S			P	S	S	S	S
Point From 2 or More		P	S	S	S	S	S		P	S	S	S	S	S			P	S	S	S	S				P	S	S	S
Point to Named Picture & From 2 or More		P	S	S	S	S	S		P	S	S	S	S	S			P	S	S	S	S						P	S

S = Spontaneous--desired response frequency obtained. P = Prompt--responds when prompted.

	Student 1							Student 2							Student 3							Student 4						
Age Started/Present	4-2/6-2							5-6/7-6							6-7/8-7							3-5/5-5						
Months	0	4	8	12	16	20	24	0	4	8	12	16	20	24	0	4	8	12	16	20	24	0	4	8	12	16	20	24
VERBAL LEBELING																												
Name Objects	P	S	S	S	S	S	S	P	S	S	S	S	S	S			P	P	S	S	S							
Name Pictures		P	P	S	S	S	S		P	S	S	S	S	S			P	P	S	S	S							
Own Name & Teacher's			P	S	S	S	S			P	S	S	S	S			P	P	P	P	P							
Vary Own Name & Teacher's Name			P	S	S	S	S			P	P	S	S	S			P	P	P	P	P							
SEQUENTIAL LEARNING OF PHRASES																												
Four-Word Phrases			P	P	S	S	S			P	P	S	S	S			P	P	P	S	S							
Expansion of Phrases			P	P	S	S	S			P	P	S	S	S			P	P	P	P	S							
"I Want..."			P	P	S	S	S			P	P	S	S	S			P	P	P	P	S							
"My Name Is..."			P	P	S	S	S			P	P	S	S	S			P	P	P	P								
"That Is ..."			P	P	S	S	S			P	P	S	S	S			P	P	P	P	S							
"This Is A ..."			P	P	S	S	S			P	P	S	S	S														
Sentences With Verbs					P	P	S					P	P	S														
Verbalize Re: Self, Objects & Activities					P	S	S					P	S	S														
Use Abstract Terms				P	S	S	S				P	S	S	S														
SPONTANEOUS & CONVERSATIONAL SPEECH																												
Use of Yes & No					P	S	S				P	P	S	S														
Spontaneous & Conversational Speech							S							S														

S = Spontaneous--desired response frequency obtained. P = Prompt--responds when prompted.

	S. 5				S. 6				S. 7				S. 8				S. 9				S. 10				S. 11			
Age Started/Present	4-6/5-2				7-1/8-1				6-7/7-7				4-10/5-10				4-11/5-11				6-0/7-0				9-8/10-8			
Months	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12
ATTENDING BEHAVIOR																												
Sit, Eye Contact			P		P	P	P	S	P	S	S	S	P	S	S	S	S	S	S	S	P	S	S	S	P	S	S	S
Attend on Command									P	S	S	S	P	P	S	S	S	S	S	S	P	S	S	S	P	S	S	S
IMITATIVE BEHAVIOR																												
Clap, Arms Up	P	P	S			P	P	S		S	S	S		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Fold Hands, Stand, Sit	P	P	S											S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Nod, Shake Head		P	P											S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Point to Objects		P	P							S	S	S			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Place Forefinger		P	P							S	S	S			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Move Objects, Yawn	P	S	S							S	S	S			S	S	S	S	S	S	S	S	S	S	P	S	S	S
Open Mouth	P	S	S			P	P	S		S	S	S			S	S	S	S	S	S	S	S	S	S	P	S	S	S
Protrude Tongue	P	S	S							S	S	S			S	S	S	S	S	S	S	S	S	S	P	S	S	S
Elevate Tongue	P	S	S							S	S	S			S	S	S	S	S	S	S	S	S	S	P	S	S	S
Lick Lips, Blow	P	S	S														S	S	S	S	S	S	S	S	P	S	S	S
VOCALIZATION TRAINING																												
Reinforce All Sounds	P	S	S				P	S		P	P	S			P	S	S	S	S	S	S	S	S	S	S	S	S	S
Selected Phoneme	P	S	S				P	P		P	P	S			P	P	S	S	S	S	S	S	S	S	S	S	S	S
Chained Phonemes	P	S	S							P	P	S			P	P	P	S	S	S	P	S	S	S	P	S	S	S
BEHAVIOR UPON VERBAL COMMAND																												
Stand, Sit, Fold Hands	P	P	P							P	S	S		P	S	S	S	S	S	S	S	S	S	S	P	S	S	S
Shake Head, Walk	P	P	P												P	S	S	S	S	S	S	S	S	S	P	S	S	S
Touch Toes, Raise Arm	P	P	P												P	S	S	S	S	S	S	S	S	S	P	S	S	S
Wave Hand, Jump	P	P	P							P	S	S				P	S	S	S	S	S	S	S	S	P	S	S	S
Turn Around, March	P	P	P							P	S	S				P	S	S	S	S	S	S	S	S	P	S	S	S
Go, Come	P	P	P							P	S	S					S	S	S	S	S	S	S	S	P	S	S	S
NONVERBAL IDENTIFICATION OF OBJECTS & PICTURES																												
Point to Named Object	P	P	P							P	S	S		P	S	S	S	S	S	S	S	S	S	S	P	S	S	S
Point From 2 or More	P	P	P								P	S		P	S	S	S	S	S	S	S	S	S	S	P	S	S	S
Point to Named Picture & From 2 or More	P	P	P								P	S		P	S	S	S	S	S	S	S	S	S	S	P	S	S	S

S = Spontaneous--desired response frequency obtained. P = Prompt--responds when prompted.

	S. 5				S. 6				S. 7				S. 8				S. 9				S. 10				S. 11			
Age Started/Present	4-6/5-2				7-1/8-1				6-7/7-7				4-10/5-10				4-11/5-11				6-0/7-0				9-8/10-8			
Months	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12
VERBAL LABELING																												
Name Objects	P	P	S									P				P	P	S	S	S	P	P	S	S	P	P	S	S
Name Pictures	P	P	P								P	P				P	P	S	S	S	P	P	S	S	P	P	S	S
Own Name & Teacher's																	P	S	S	S	P	P	S	S	P	P	S	S
Vary Own Name & Teacher's Name																												
SEQUENTIAL LEARNING OF PHRASES																												
Four-Word Phrases											P	P				P	P	P	S	S	P	P	S	S	P	P	S	S
Expansion of Phrases																	P	P	S	S	P	P	S	S	P	P	S	S
"I Want ..."																	P	P	S	S	P	P	S	S	P	P	S	S
"My Name Is ..."																	P	P	S	S	P	P	S	S	P	P	S	S
"That Is ..."																	P	P	S	S	P	P	S	S	P	P	S	S
"This Is A ..."																	P	P	S	S	P	P	S	S	P	P	S	S
Sentences With Verbs																	P	P	S	S	P	P	P	S	P	P	P	S
Verbalize Re: Self Ojbects & Activities																	P	P	S	S	P	P	P	S	P	P	P	S
Use Abstract Terms																												
SPONTANEOUS & COVER-SATIONAL SPEECH																												
Use of Yes & No																	P	P	S	S	P	P	P	S	P	P	P	P
Spontaneous & Conversational Speech																	P	P	P	S	P	P	P	S				

S = Spontaneous--desired response frequency obtained. P = Prompt--responds when prompted.

APPENDIX

NAME_____

RECORD SHEET

EYE CONTACT TRAINING

Session #_____	Session #_____
Date_____	Date_____
1st 10-minute period	2nd 10-minute period
Response ' or 0	Response ' or 0
Prompts	Prompts
# Eye Contacts_____ # Prompts_____	# Eye Contacts_____ # Prompts_____

% Eye Contact_____

RECORD SHEET

BASELINE AND POST TEST DATA FOR GROSS MOTOR IMITATION

Session #_____	Session #_____
Date_____	Date_____
1st 10-minute period	2nd 10-minute period
Response ' or 0	Response ' or 0
Raise Arms	Raise Arms
Fold Hands	Fold Hands
Sit Down	Sit Down
Nod Head	Nod Head
Shake Head	Shake Head
Pointing	Pointing
Move Objects	Move Objects
Clap Hands	Clap Hands
Stand Up	Stand Up
Place Finger on Object	Place Finger on Object
# Correct Imitations _____	# Correct Imitations_____

% Correct Imitations

APPENDIX

NAME_____

RECORD SHEET

BASELINE AND POST TEST DATA FOR GROSS MOTOR IMITATION

Session #_____	Session #_____
Date_____	Date_____
1st 10-minute period	2nd 10-minute period
Response ' or 0	Response ' or 0
Raise Arms	Raise Arms
Fold Hands	Fold Hands
Sit Down	Sit Down
Nod Head	Nod Head
Shake Head	Shake Head
Pointing	Pointing
Move Objects	Move Objects
Clap Hands	Clap Hands
Stand Up	Stand Up
Place Finger on Object	Place Finger on Object
# Correct Imitations _____	# Correct Imitations _____

% Correct Imitations _____

APPENDIX

NAME_____

RECORD SHEET

BASELINE AND POST TEST DATA FOR ORAL MOTOR IMITATION

Session #_____	Session #_____
Date_____	Date_____
1st 10-minute period	2nd 10-minute period
Response ' or 0	Response ' or 0
Yawn	Yawn
*Touch Mouth	*Touch
Open Mouth	Open Mouth
*Smile (ee)	*Smile (ee)
Protrude Tongue	Protrude Tongue
*Round Lips (o)	*Round Lips (o)
Elevate Tongue	Elevate Tongue
Lick Lips	Lick Lips
*Lips Together	*Lips Together
Blow	Blow
#Correct Imitations_____	#Correct Imitations _____

% Correct Imitations

*Not Trained

APPENDIX

NAME_____

RECORD SHEET

BASELINE AND POST TEST DATA FOR VOCAL IMITATION

Session #_____	Session #_____
Date_____	Date_____
1st 10-minute period	2nd 10-minute Period
Response ' or 0	Response ' or 0
e	e
o	o
s (six)	s (six)
d (duh)	d (duh)
b (buh)	b (buh)
p (puh)	p (puh)
oo (moo)	oo (moo)
ha	ha
m (mmm)	m (mmm)
t (tuh)	t (tuh)
*Other	*Other
*Other	*Other
*Other	*Other
# Correct Imitations _____	# Correct Imitations_____

% Correct Imitations

*Sounds selected by T. and used for testing but not trained.

	S. 12				S. 13				S. 14				S. 15				S. 16				S. 17				S. 18			
Age Started/Present	6-10/7-10				8-0/8-8				12-8/13-6				13-3/13-7				11-1/11-5				12-10/13-2				11-10/12-2			
Months	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12
ATTENDING BEHAVIOR																												
Sit, Eye Contact	P	S	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Attend on Command	P	S	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
IMITATIVE BEHAVIOR																												
Clap, Arms Up	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Fold Hands, Stand, Sit	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Nod, Shake Head	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Point to Objects	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Place Forefinger	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Move Objects, Yawn	P	P	S	S	S	S	S		P	S	S		S	S			S	S			S	S			S	S		
Open Mouth	P	P	S	S	S	S	S			P	P		S	S			S	S			S	S			S	S		
Protrude Tongue	P	P	S	S	S	S	S			P	P		S	S			S	S			S	S			S	S		
Elevate Tongue	P	P	S	S	S	S	S			P	P		S	S			S	S			S	S			S	S		
Lick Lips, Blow	P	P	S	S	S	S	S						S	S			S	S			S	S			S	S		
VOCALIZATION TRAINING																												
Reinforce All Sounds	P	S	S	S	S	S	S		P	P	P		S	S			S	S			S	S			S	S		
Selected Phoneme	P	S	S	S	S	S	S			P	P		S	S			S	S			S	S			S	S		
Chained Phonemes	P	S	S	S	S	S	S						S	S			S	S			S	S			S	S		
BEHAVIOR UPON VERBAL COMMAND																												
Stand, Sit, Fold Hands	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Shake Head, Walk	P	P	S	S	S	S	S			S	S		S	S			S	S			S	S			S	S		
Touch Toes, Raise Arm	P	P	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Wave Hand, Jump	P	P	S	S	S	S	S			S	S		S	S			S	S			S	S			S	S		
Turn Around, March	P	P	S	S	S	S	S						S	S			S	S			S	S			S	S		
Go, Come	P	P	S	S	S	S	S						S	S			S	S			S	S			S	S		
NONVERBAL IDENTIFICATION OF OBJECTS & PICTURES																												
Point to Named Object	P	S	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Point From 2 or More	P	S	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		
Point to Named Picture & From 2 or More	P	S	S	S	S	S	S		S	S	S		S	S			S	S			S	S			S	S		

S = Spontaneous--desired response frequency obtained. P = Prompt--responds when prompted.

	S. 12				S. 13				S. 14				S. 15				S. 16				S. 17				S. 18			
Age Started/Present	6-10/7-10				8-0/8-8				12-8/13-6				13-3/13-7				11-1/11-5				12-10/13-2				11-10/12-2			
Months	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12	0	4	8	12
VERBAL LABELING																												
Name Objects	P	P	S	S	S	S	S				P		P	S			P	S			P	S			P	S		
Name Pictures	P	P	S	S	S	S	S						P	S			P	S			P	S			P	S		
Own Name & Teacher's	P	P	S	S	S	S	S						P	S			P	S			P	S			P	S		
Vary Own Name & Teacher's Name	P	P	P	S	P	S	S						P	S			P	S			P	S			P	S		
SEQUENTIAL LEARNING OF PHRASES																												
Four-Word Phrases	P	P	S	S	P	S	S						P	S			P	S			P	S			P	S		
Expansion of Phrases	P	P	S	S	P	S	S							P				P				P			P	S		
"I Want ..."	P	P	P	S	P	S	S						P	S			P	S			P	S			P	S		
"My Name Is..."	P	P	P	S	P	S	S						P	S			P	S			P	S			P	S		
"That Is ..."	P	P	P	S	P	S	S						P	S			P	S			P	S			P	S		
"This Is A ..."	P	P	P	S	P	S	S						P	S			P	S			P	S			P	S		
Sentences With Verbs	P	P	P	S	P	S	S										P	S			P	S			P	P		
Verbalize Re: Self Objects & Activities	P	P	P	S	P	S	S										P	S										
Use Abstract Terms	P	P	P	S	P	S	S										P	S										
SPONTANEOUS & CONVERSATIONAL SPEECH																												
Use of Yes & No	P	P	P	P	P	S	S										P	S										
Spontaneous & Conversational Speech					P	S	S																					

S = Spontaneous--desired response frequency obtained. P = Prompt--responds when prompted.

APPENDIX

NAME_____

OBJECTIVE_____

RECORD SHEET

Session #	Date	Sound (s), Word (s) Or Sentence (s)	#Correct Responses 10-Minute Periods 1st	2nd	#Trails Until Mastery

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